

**In the Claims**

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3 1. (Currently Amended) An apparatus, comprising:  
4 a fuel cell for producing a flow of electric charges from a fuel;  
5 an electric charge counter coupled with the fuel cell, wherein counted  
6 electric charges are proportional to an amount of the fuel used in the fuel cell to  
7 produce the counted electric charges, wherein the electric charge counter:  
8 counts electric charges by integrating the flow of electric charges  
9 with respect to time;  
10 counts electric charges by measuring a voltage proportional to a flow  
11 rate of the electric charges and by assigning a frequency to the voltage;  
12 varies the frequency in proportion to changes in the flow rate of the  
13 electric charges over time; and  
14 increments the count of the electric charges at an incrementing rate  
15 proportional to the frequency; and  
16 a display coupled with the electric charge counter to show an amount of the  
17 fuel based on corresponding counted electric charges.

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19 2. (Original) The apparatus as recited in claim 1, wherein the display  
20 shows an amount of fuel used by the fuel cell based on the counted electric  
21 charges.

22  
23 3. (Original) The apparatus as recited in claim 1, further comprising a  
24 fuel supply, wherein the display shows an amount of fuel remaining in the fuel  
25

1 supply after subtracting the amount of fuel corresponding to the counted electric  
2 charges.

3  
4 4. (Cancelled)

5 5. (Cancelled)

6 6. (Cancelled)

7 7. (Cancelled)

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9 8. (Original) The apparatus as recited in claim 1, wherein the electric  
10 charge counter includes an interpreter to determine a proportionality factor  
11 between the counted electric charges and the amount of fuel used to produce the  
12 counted electric charges.

13  
14 9. (Original) The apparatus as recited in claim 8, further comprising a  
15 temperature compensator, wherein the amount of fuel shown on the display is  
16 corrected for a temperature if the temperature affects the proportionality between  
17 the quantity of counted electric charges and the amount of fuel used to produce the  
18 counted electric charges.

19  
20 10. (Original) The apparatus as recited in claim 8, further comprising a  
21 pressure compensator, wherein the amount of fuel shown on the display is  
22 corrected for a pressure if the pressure affects the proportionality between the  
23 quantity of counted electric charges and the amount of fuel used to produce the  
24 counted electric charges.  
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11. (Original) The apparatus as recited in claim 8, further comprising a fuel loss compensator, wherein the amount of fuel shown on the display is corrected if a fuel loss affects the proportionality between the quantity of counted electric charges and the amount of fuel used to produce the counted electric charges.

12. (Original) The apparatus as recited in claim 8, further comprising a fuel mix compensator, wherein the amount of fuel shown on the display is corrected if a fuel mix affects the proportionality between the quantity of counted electric charges and the amount of fuel used to produce the counted electric charges.

13. (Original) The apparatus as recited in claim 8, further comprising a self-calibrator to determine, while counting electric charges during fuel use, the proportionality between the counted electric charges and the amount of fuel used to produce the counted electric charges.

14. (Original) The apparatus as recited in claim 13, wherein the self-calibrator performs automatic determination of the proportionality.

15. (Original) The apparatus as recited in claim 8, further comprising a fuel comparator to determine electric charge counts for equivalent amounts of different types of fuel.

1  
2 16. (Currently Amended) A fuel cell, comprising:  
3 a means for converting a fuel into a flow of electric charges, wherein the  
4 quantity of electric charges produced over time is proportional to the quantity of  
5 fuel molecules converted;

6 a means for counting the electric charges in the flow, wherein:

7 the means for counting the electric charges integrates the flow of  
8 electric charges with respect to time;

9 the means for counting the electric charges measures a voltage  
10 proportional to the flow of the electric charges and assigns a frequency to  
11 the voltage;

12 the means for counting electric charge varies the frequency in  
13 proportion to changes in the flow rate of electric charges over time; and

14 the electric charge counter increments the count of the electric  
15 charges at an incrementing rate proportional to the frequency; and

16 a means for displaying an amount of fuel molecules converted.  
17

18 17. (Original) The fuel cell as recited in claim 16, wherein the means for  
19 displaying shows the amount of fuel molecules converted as an amount of fuel  
20 from a fuel supply.  
21

22 18. (Original) The fuel cell as recited in claim 17, wherein the means for  
23 displaying shows the amount of molecules converted as an amount of fuel  
24 remaining in a fuel supply.  
25

1  
2 19. (Cancelled)

3 20. (Cancelled)

4 21. (Cancelled)

5 22. (Cancelled)

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7 23. (Original) The fuel cell as recited in claim 16, wherein the means for  
8 counting electric charges measures an overall power output of the fuel cell over  
9 time when connected to a particular electrical load and correlates the overall  
10 power output of the fuel cell over time to the quantity of fuel molecules converted  
11 using an efficiency factor of the fuel cell when connected to the particular  
12 electrical load.

13  
14 24. (Original) The fuel cell as recited in claim 16, wherein the means for  
15 counting electric charges includes a means for determining a proportionality  
16 between the count of the electric charges and the quantity of fuel molecules  
17 converted.

18  
19 25. (Original) The fuel cell as recited in claim 24, wherein the means for  
20 determining a proportionality further comprises a temperature compensator.

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22 26. (Original) The fuel cell as recited in claim 24, wherein the means for  
23 determining a proportionality further comprises a pressure compensator.  
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1           27. (Original) The fuel cell as recited in claim 24, wherein the means for  
2 determining a proportionality further comprises a fuel loss compensator.

3  
4           28. (Original) The fuel cell as recited in claim 24, wherein the means for  
5 determining a proportionality further comprises a fuel mix compensator.

6  
7           29. (Original) The fuel cell as recited in claim 24, wherein the means for  
8 determining a proportionality further comprises a self-calibrator to determine the  
9 proportionality while counting electric charges during fuel use.

10  
11           30. (Original) The fuel cell as recited in claim 29, wherein the self-  
12 calibrator performs automatic determination of the proportionality.

13  
14           31. (Original) The fuel cell as recited in claim 16, further including a  
15 fuel comparator to determine electric charge counts from equivalent amounts of  
16 different types of fuel.

32. (Currently Amended) A fuel supply system, comprising:  
a fuel container for holding a remaining amount of fuel;  
an electric charge counter to count an electric charge content of an amount  
of fuel taken from the fuel container, wherein the count of the electric charge  
content is proportional to the amount of the fuel taken from the fuel container,  
wherein the electric charge counter:  
counts electric charges by measuring a voltage proportional to a flow  
rate of the electric charges and by assigning a frequency to the voltage;  
varies the frequency in proportion to changes in the flow rate of the  
electric charges over time; and  
increments the count of the electric charges at an incrementing rate  
proportional to the frequency; and  
a display to show the remaining amount of fuel in the fuel container.

33. (Original) The fuel supply system as recited in claim 32, wherein the  
electric charge content is counted during oxidation of the fuel by a fuel cell.

34. (Original) The fuel supply system as recited in claim 32, wherein the  
fuel comprises fuel molecules, and each fuel molecule contributes a constant  
number of electric charges to the count of the electric charge content.

1           35. (Currently Amended) A fuel gauge, comprising:  
2           a charge counter to count electrical charges produced in a fuel cell by a fuel  
3           from a fuel supply, wherein the electric charge counter:  
4                     counts electric charges by measuring a voltage proportional to a flow  
5                     rate of the electric charges and by assigning a frequency to the voltage;  
6                     varies the frequency in proportion to changes in the flow rate of the  
7                     electric charges over time; and  
8                     increments the count of the electric charges at an incrementing rate  
9                     proportional to the frequency; and  
10          a display to show an amount of the fuel based on the counted electrical  
11          charges.

12  
13          36. (Original) The fuel gauge as recited in claim 35, wherein the amount  
14          of the fuel displayed is an amount of the fuel that has been used from the fuel  
15          supply.

16  
17          37. (Original) The fuel gauge as recited in claim 35, wherein the amount  
18          of the fuel displayed is an amount of the fuel remaining in the fuel supply.

19  
20          38. (Withdrawn) A count interpreter for a charge counting fuel gauge,  
21          comprising:  
22                  a count calibrator; and  
23                  a fuel loss compensator.  
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1           39. (Withdrawn) The count interpreter as recited in claim 38, wherein  
2 the count calibrator further includes a temperature compensator to adjust a display  
3 of a fuel amount if a charge count is affected by a temperature.  
4

5           40. (Withdrawn) The count interpreter as recited in claim 38, wherein  
6 the count calibrator further includes a pressure compensator to adjust a display of  
7 a fuel amount if a charge count is affected by a pressure.  
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9           41. (Withdrawn) The count interpreter as recited in claim 38, wherein  
10 the count calibrator further includes a fuel mix compensator to adjust a display of  
11 a fuel amount if a charge count is affected by a fuel mix.  
12

13           42. (Withdrawn) The count interpreter as recited in claim 38, wherein  
14 the fuel loss compensator adjusts a fuel amount to be displayed by an amount of  
15 fuel that does not contribute to a charge count.  
16

17           43. (Withdrawn) The count interpreter as recited in claim 38, further  
18 comprising a self-calibrator to find a relationship between an amount of fuel and a  
19 quantity of electric charges counted during use of a fuel that produces electric  
20 charges in a fuel cell.  
21

22           44. (Withdrawn) The count interpreter as recited in claim 38, further  
23 comprising a fuel comparator to determine a quantity of electric charges yielded  
24 by same amounts of different fuels.  
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2 45. (Currently Amended) A method, comprising:  
3 producing electric charges in a fuel cell using a fuel;  
4 counting the electric charges to determine an amount of the fuel used to  
5 produce the electric charges, wherein counting the electrical charges comprises:  
6 measuring a voltage proportional to a flow rate of the electric  
7 charges and by assigning a frequency to the voltage;  
8 varying the frequency in proportion to changes in the flow rate of the  
9 electric charges over time; and  
10 incrementing the count of the electric charges at an incrementing  
11 rate proportional to the frequency; and  
12 displaying the amount.  
13

14 46. (Original) The method as recited in claim 45, wherein the producing  
15 electric charges using a fuel includes producing a number of electric charges for  
16 each molecule of fuel, wherein the number is a constant.  
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18 47. (Original) The method as recited in claim 45, wherein the electric  
19 charges are obtained from an oxidation reaction of the fuel.  
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1           48. (Currently Amended) A method, comprising:  
2           connecting an electric charge counter to a fuel cell, wherein the fuel cell  
3           produces electric charges from a fuel;  
4           counting the electric charges, wherein counting the electrical charges  
5           comprises:  
6                 measuring a voltage proportional to a flow rate of the electric  
7                 charges and by assigning a frequency to the voltage;  
8                 varying the frequency in proportion to changes in the flow rate of the  
9                 electric charges over time; and  
10                incrementing the count of the electric charges at an incrementing  
11                rate proportional to the frequency; and  
12           displaying an amount of fuel corresponding to the counted electric charges.

13  
14           49. (Original) The method as recited in claim 48, further comprising  
15           displaying an amount of fuel remaining in a fuel supply after an amount of fuel  
16           corresponding to the counted electric charges has been subtracted from the fuel  
17           supply.

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19           50. (Original) The method as recited in claim 48, further comprising  
20           determining a proportionality factor between a quantity of the counted electric  
21           charges and an amount of fuel used by the fuel cell.  
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